Break Energy
Networks and Telecommunications

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Abstract

In the present poster we will talk about a new project that will provide us a new way to build a smart house and enjoy the technology in our regular life. In this case we will implement an automated mechanism that are going to be in the lights and the power suppliers.

Motivation

In this era, where technology is a development priority, people are looking for alternatives to save time when performing certain activities, so creating a way to turn on, turn off the lights or simply make the children can not turn on the TV, will give them an ease of energy management at home. Figure 1 shows examples of the use of technology for the home.

Figure 1 Examples of solutions to common problems
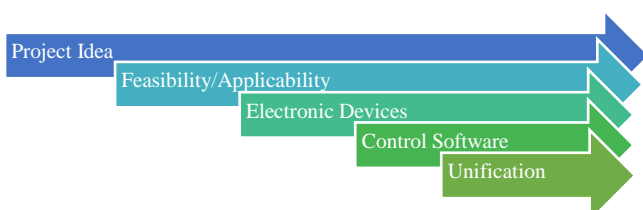
Methodology

Figure 2 General diagram of the Project

Figure 2 shows the general diagram to be developed for the Break Energy project, which through the control of energy times and having the necessary equipment turned on, aims to reduce the overall daily energy consumption.
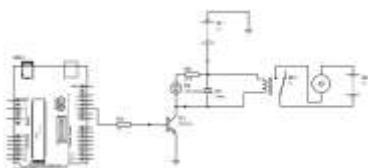

Figure 3 Driver design in simulation

In Figure 3 it is possible to observe the first electronic circuit to be built and it is a power cut that will be used to perform digital shutdowns of all electronic devices or ignition of the same, it is important to mention that Arduino, Java and a SQL solution that was hosted on a remote Oracle Cloud server was implemented, so you will have time management and can analyze the times of higher energy consumption.
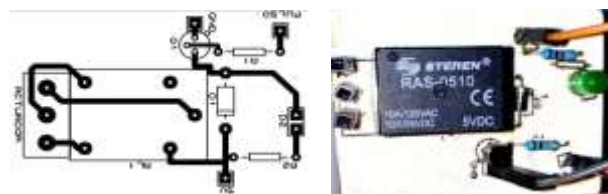
Results

Figure 4 Driver construction

Figure 4 shows the finished circuit that will be implemented within the project, likewise in Figure 5 are shown captures of the JAVA interface linked to SQL, in this database will be entered the activities to be performed and when JAVA detects the action, it will send the order to Arduino to be executed.
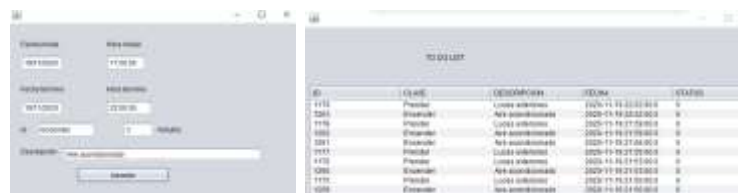

Figure 5 Data base

Figure 6 shows the mobile application developed, on the right side is the main screen in which are the buttons for each room, which when clicked will open a second screen showing the buttons that allow you to turn on or off lights, increase or decrease the brightness and cut or allow the passage of electric current in the sockets, here begins the union between home automation and the system proposed in this project.

Figure 6 Examples of solutions to common problems

Conclusions

The connection between Arduino, Java and the database was made, as well as the connection with the electronic control circuits built, unifying programming concepts, Service Oracle Cloud concepts and remote control.

Future of research

Build a more robust system, where you can remotely manage the electronic locks of the doors of the house, this will be done with motors and the control software will be in a mobile application.

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